SCHEDULING AND ARBITRATION SCHEME
FOR NETWORK PROCESSING DEVICE

ABSTRACT OF THE DISCLOSURE

An arbitration scheme is used for scheduling connections between input ports and output ports. Input ports request connections to the output ports for a next time slot. Arbitration parameters, such as priority and weight, are identified for the buffer requests. Output port arbitrations are conducted for each one of the output ports according to the arbitration parameters. If there are more than two input buffers with the same priority and weight, a round robin arbitration is used. Grants are issued to the input port buffers winning the output port arbitrations. Input port arbitrations are conducted using the same arbitration parameters for input ports receiving multiple grants. The grants are accepted by the input port buffers winning the input port arbitrations. The input port buffers accepting the grants are connected to the requested output ports. Virtual output buffers are used to prevent packet blocking at the input ports and a dual multicast and unicast arbitration is used for multicast and unicast packets.